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ABSTRACT

According to a recent survey of school administrators, nearly 5 million American public school students attend classes in substandard buildings. These children are required by law to enter schools that are structurally unsound, environmentally unsafe, or shoddy places for learning. This report summarizes findings of a nationwide study of U.S. public school buildings conducted by the American Association of School Administrators. The study compiled existing data on the nation's public school buildings, educational finance, school energy and environment concerns, and operational cost-cutting measures. These data are augmented by an Educational Research Service study that used a random sample of 2,418 elementary and secondary school administrators. Key findings are presented concerning the condition of school facilities, state and local governments' ability to meet financial needs, the status of schools' energy efficiency efforts, existing opportunities to cut school operating costs, and the leadership void in federal and state governments to deal with these vital concerns. Included is a fact sheet on major findings and a list of recommendations. (MLH)

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SCHOOLHOUSE IN THE RED

Cutting Our Losses

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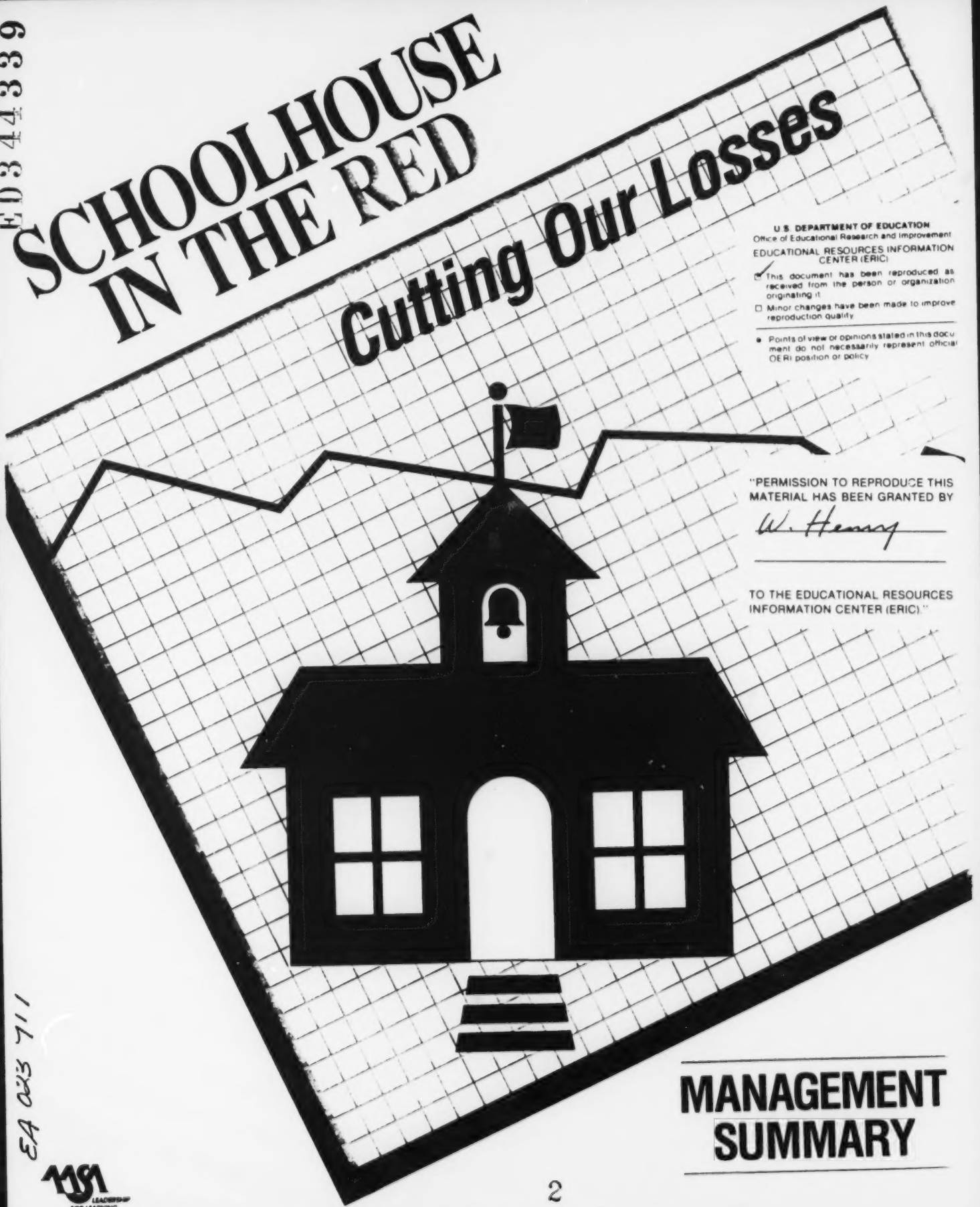

MANAGEMENT SUMMARY

EA 023 711

AASA LEADERSHIP FOR LEARNING

AMERICAN ASSOCIATION OF SCHOOL ADMINISTRATORS

BEST COPY AVAILABLE

The American Association of School Administrators is grateful to Honeywell for making possible this benchmark study of school facilities and energy. The results of this study and the numerous efforts that are stimulated because of it will have a profound impact on the learning environment for millions of children...who are tomorrow's leaders.

Richard D. Miller, Executive Director
American Association of School Administrators

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SCHOOLHOUSE IN THE RED

A NATIONAL STUDY OF SCHOOL FACILITIES AND ENERGY USE

MANAGEMENT SUMMARY

Nearly five million American public school students attend classes in substandard buildings, according to a nationwide survey of school administrators. These children are required by law to enter schools that are structurally unsound, environmentally unsafe or as described by the Education Writers Association, "shoddy places for learning."

The first nation-wide study of America's public school buildings in nearly 30 years is being conducted by the American Association of School Administrators (AASA), an organization representing 18,500 of the nation's school superintendents and other top administrators. This Management Summary is part of a larger AASA study, supported by a grant from Honeywell. This support is part of a long history of involvement in education, spear-headed by Honeywell's CEO, James Renier.

Since the public schools are the only sector of the economy that cannot automatically pass through higher energy costs by charging more for goods or services, the AASA study also seeks to assess the impact volatile energy prices have on our schools, what the schools have done to contain these costs and what opportunity remains to cut school operating costs.

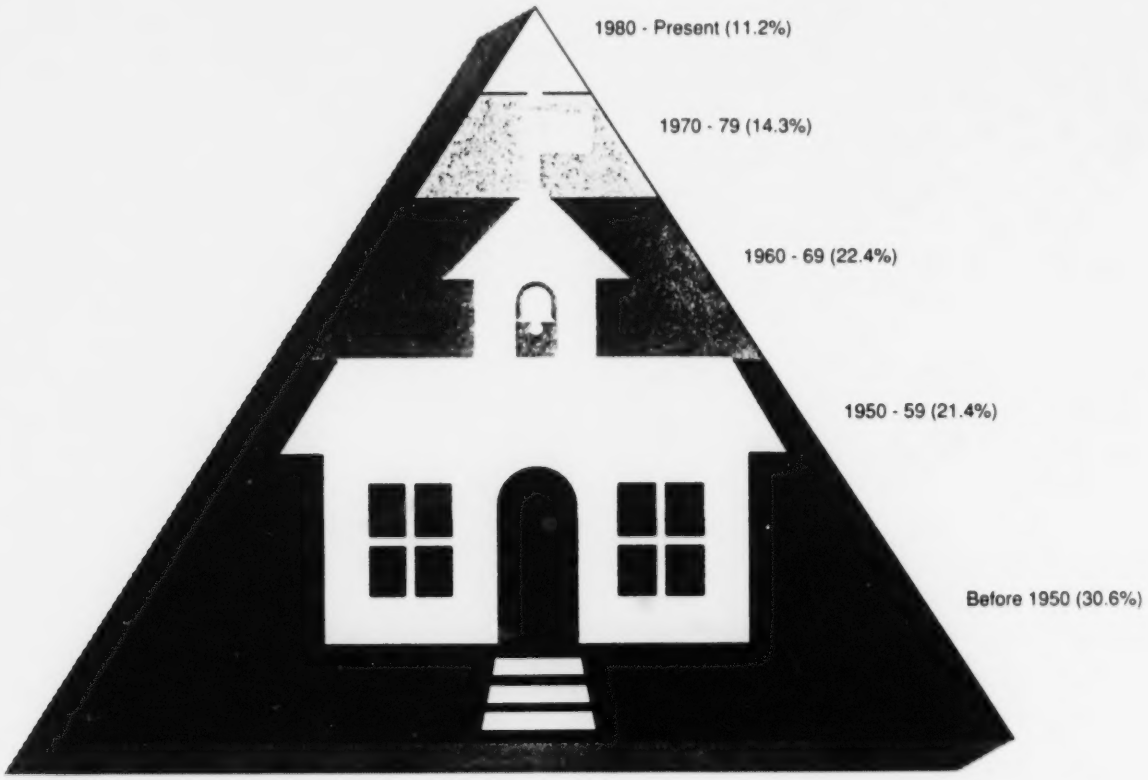
The study is a compilation of existing data on the nation's public school buildings, education finance, school energy and environmental concerns and opportunities to control operating costs. These data are augmented by a survey conducted by Educational Research Service using a random sample of 2,418 elementary and secondary school administrators. The margin of error is ±3 percent.

The resulting data should be vital to decisions education leaders must make as our nation strives for greater educational promise for America's youth by the year 2000. This management summary highlights the key findings: (a) the condition of public school facilities; (b) state and local governments' ability to meet facility needs; (c) the status of the schools' energy efficiency efforts; (d) existing opportunities to cut school operational costs; and (e) a leadership void in federal and state governments to deal with these vital concerns. The critical issues raised by these findings are identified.

EDUCATIONAL FACILITIES

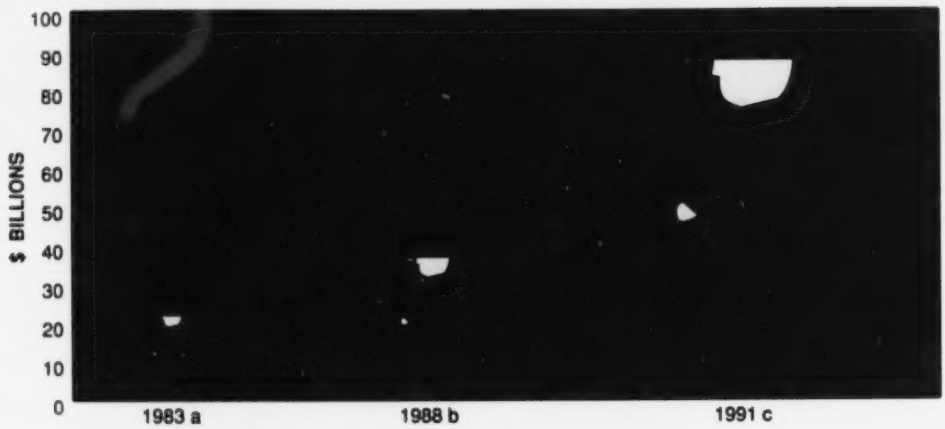
OUR AGING SCHOOLS

- 74 percent of our nation's school buildings were built prior to World War II, or during the 50s-60s era of cheap construction to meet "Baby Boom" needs. Replacement of these buildings is long overdue.
- 12 percent of the buildings are considered "inadequate," because they are too old, too small, have deteriorating mechanical systems and/or seriously need window replacement.
- 11 percent of our schools have been built since 1980.



MAINTENANCE - GOING DEEPER IN THE RED

The deferred maintenance price tag for school facilities keeps growing.



a) American Association of School Administrators, National School Boards Association and Council of Great City Schools
b) Education Writers of America Wolves at the Schoolhouse Door
c) Association of School Business Officials, School Business Affairs

THE LEARNING ENVIRONMENT

- 25 percent of our schools are "shoddy places for learning" according to the Education Writers Association.
- The Carnegie Foundation reported in 1988 that student attitudes about education are a direct reflection of their learning environment. An independent study by the Washington, D.C. schools in 1991 concluded that the students' achievement as measured by standardized test would be 5-11 percent higher if the physical conditions of their schools improved.
- Students know the difference...and care. If given more education dollars, the first place America's high school students would invest the money is in improved maintenance and construction, according to a poll of 72,000 teenagers by USA Today in the summer of 1991.
- Enrollment pressures from the "baby boomlet," lower drop out rates and deteriorating old buildings have caused a desperate need for new schools. The 1988 price tag for needed new school buildings was $84 billion.

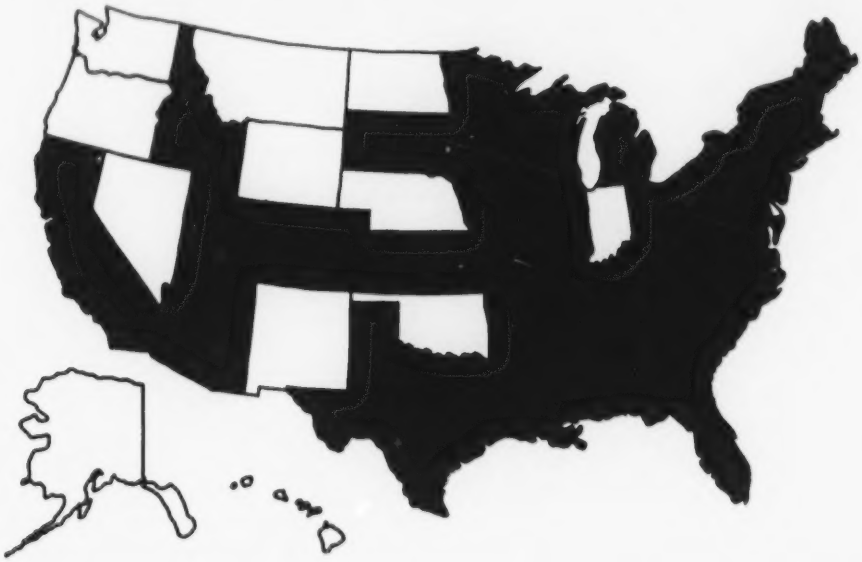
SAFETY AND HEALTH CONCERNS

- Each day one child in eight is required by law to attend a school that is structurally unsound, environmentally unsafe or both.
- Asbestos, radon and a myriad of indoor air quality problems concern administrators. Guidance to help administrators assure a healthy environment is almost non-existent. The only standard available, American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) 62-1989, Ventilation for Acceptable Indoor Air Quality, increases the required level of outside air. Compliance with ASHRAE 62-1989 will increase school energy consumption at least 20 percent, or $1.5 billion, according to a U.S. Department of Energy study.

SCHOOL FINANCE

STATE SUPPORT

- 50 percent of school revenues across the nation come from the state, running as high as 91.9 percent state funding in Hawaii.
- The 1990-91 recession placed 37 states in a budget deficit position. 28 percent of the states' budgets go to education. State short falls are having a direct and serious impact on school budgets.



RIGID BUDGETS

- Public schools are locked into rigid budgets, which are tied to previous legislative appropriations, property taxes and budget review procedures.
- The schools' limited flexibility leaves them no recourse but to cut educational programs and services (including maintenance) to pay unexpected costs; i.e., higher utility bills, legal costs.

GROWING DEMANDS ON FEWER DOLLARS

- Revenues are dropping, while climbing enrollments place greater demands on school funds.
- Other demands, including federal/state environmental mandates, medical services for special education children, and educational reform, etc. are seldom accompanied by sufficient monies to implement the laws, regulations and guidelines.
- Costs for all school supplies are up more than 56 percent over 1983 costs.
- In just the past year, the 1991-92 school energy bill jumped $490 million.
- Unexpected demands also draw down funds available for educational programs. For example, U.S. schools now face 11,500 lawsuits every year.

SCHOOL ENERGY CONCERNS

THE COST

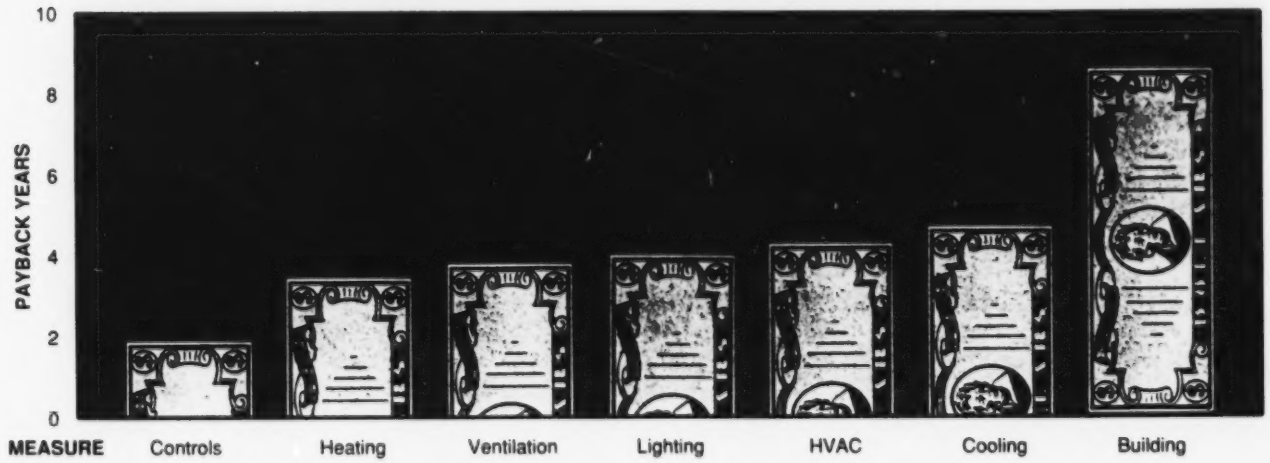
- The nation's public schools will spend $7.4 billion this year for energy.
- School utility costs increased 11 percent from 1989 to 1990 and jumped another 7 percent from 1990 to 1991.

THE HISTORY

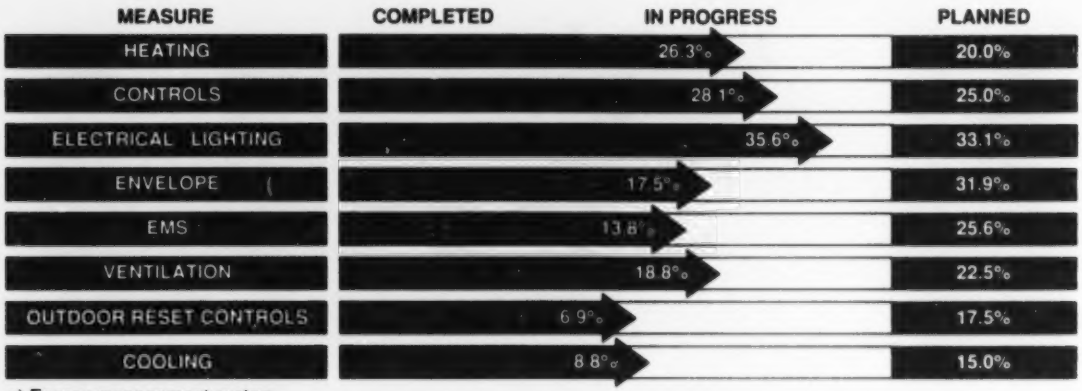
- 44.4 percent of the nation's school districts do not have an energy management program or are just getting started. Less than half the nation's districts (46.2%) feel they have an effective energy program. Only one-third of the districts in the West say they have effective programs in place.
- In the last three years, 25 percent of the districts have not increased energy management activity and 4 percent have actually decreased their efforts to reduce consumption. 8 percent of the large districts (over 10,000 enrollment), whose utility bills are at least $1.4 million each year, have actually decreased efforts to contain energy expenditures.
- One-third (34.6%) of the districts have not performed energy audits on any of their buildings. The audits in two-thirds (67.6%) of the districts are more than 4 years old.

THE OPPORTUNITY

- Schools could save 25 percent, or $1.85 billion per year, through improved energy efficiency.
- If schools were to implement only those energy efficiency measures with a three year payback or less, the investment would be over $5 billion. This work would also put approximately $3 billion into labor costs for the hard-pressed construction industry.
- Through an analysis of the savings achieved through energy conservation measures funded by the federal government, U.S. Department of Energy (DOE) has identified the most cost effective measures as:



- Structural needs, poor technical advice and limited knowledge of energy efficiency procedures have led schools to use the greatest percentage of federal grant funds for building envelope work, the least cost-effective energy conservation measure.
- The 1991 AASA survey revealed the percentages of districts that had completed certain types of energy conservation measures during the period of 1987-1990, had measures in progress in mid-1991, or have planned them for 1991-94.



a) Energy management system

BARRIERS TO ENERGY EFFICIENCY

- The major factors that detract or inhibit energy efficiency improvements from all corners of the nation, no matter what the district size, are:
  - general lack of funds
  - financial needs for educational programs
  - the money required to meet environmental mandates; i.e., asbestos
- The districts' use of private sector energy efficiency financing has increased from the 1988 U.S. DOE figure of 10 percent to 19.4 percent in 1991. Uncertainty regarding legal barriers (38%) detracts from the use of private funds; however, no legal barriers are known to exist. States have passed laws to enhance public school access to private funds; e.g., Ohio, Minnesota, Texas, Michigan, Pennsylvania and others are currently considering such legislation.

MOTIVATING FACTORS

The AASA survey was conducted shortly after a period of marked price volatility attributable to Desert Storm and other unrest in the Middle East during 1990-91. This may have influenced the emphasis respondents placed on high or unstable energy prices.

- The major factors (>33%) that highly motivate districts to conduct energy efficiency activities are shown below in rank order for all districts. Factors by district size are also shown.

MOTIVATING FACTOR	DISTRICT ENROLLMENT			
	ALL	>10,000	1,000 - 9,999	<1,000
HIGH OR UNSTABLE ENERGY PRICES	61.0	53.8	57.7	58.7
AVAILABITY OF OUTSIDE FUNDS	33.5	32.6	30.8	35.9

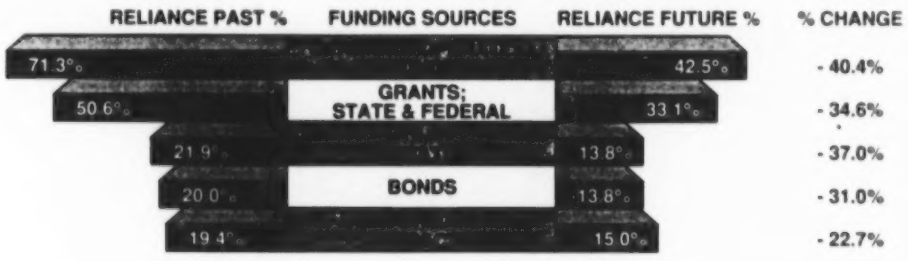
ENERGY EFFICIENCY FINANCING

PAST SOURCES OF ENERGY FINANCING

- The primary source of funds to perform energy work in the past has been the school's general operating fund.
- 50 percent of the districts have benefitted from state or federal energy grants.
- About 20 percent of the districts have made energy improvements through utility rebates, the use of bonds or by entering into performance contracts.

FUTURE FINANCING SOURCES (1991-1994)

- When asked to identify anticipated funding sources for the 1991-94 period, there was a significant drop in the schools' reliance on all major funding sources, suggesting a high level of uncertainty as to where schools expect to get energy financing. Two subcategories are placing greater reliance on specific financing mechanisms; the West's dependence on bonds (up 19.8%) and large districts' use of performance contracting (up 23%).
- For all schools, previous and future reliance on funding sources are:



* Respondents could check more than one; percentages will not add to 100.

- The largest drop in energy funding sources is in general/operating funds. The reliance administrators place on these funds may still be too high, however, given the states' fiscal condition.
- The present pressures on utilities; e.g., managing customer demands through energy efficiency assistance and provisions in the Clean Air Act, all point to more energy efficiency help for schools. More districts than the 13.8 percent, who indicated they hope to use utility rebates, should benefit from this situation.
- Performance contracting in schools has nearly doubled in the past four years, from 10 percent in 1987 to 19.4 percent in 1991. With fiscal constraints on local and state governments and a decline in Petroleum Violation Escrow funds, oil overcharge money, the reliance on private sector energy financing is apt to increase. Large districts do expect greater reliance on performance contracting. Perceived legal barriers, such as limitations on multi-year obligations, could be a significant factor in keeping schools from accessing this source of energy assistance.

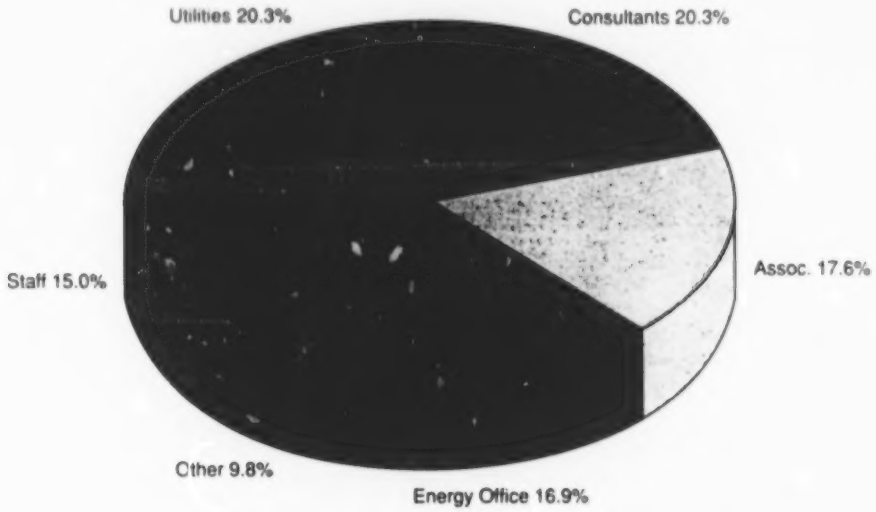
FACILITY & ENERGY INFORMATION

FACILITY INFORMATION

- At the federal level and in most states, there is a serious leadership void in providing schools with facility guidance.

ENERGY INFORMATION

- No one source dominates as a source of energy information for the nation's schools.
- No more than 20 percent of the districts rely on any given source of energy information.
- More districts rely on utility companies and outside consultants than any other source, except in the Southeast where only 4 percent of the districts rely on architects/engineers. Southeastern districts rely mostly on professional conferences and literature, which is the third most popular source for all districts.
- Only 16 percent of the districts rely primarily on their state energy offices for energy information. Administrators are getting virtually no facility or energy guidance from universities.



- 20.3 percent of the school systems rely on consultants, primarily architects and engineers (A&E), for their energy information; yet, approximately 25 percent of the A&E recommendations are never implemented because of factors A&E's neglected to consider.
- School administrators do not view equipment vendors as a primary source of information.

CRITICAL ISSUES

A review of the school facility and energy data available plus the new survey findings reveal several critical issues.

CONDITION OF SCHOOL FACILITIES

- age of school plants
- structurally unsound facilities
- environmentally unsafe schools
- inadequate places for learning

INDOOR AIR PROBLEMS

- internal environmental concerns pose an increasing problem for schools
- limited guidance
- compliance with ASHRAE Standard 62-1989 will increase energy consumption 20%

SCHOOL FINANCE

- resources to meet educational needs
- responsiveness to volatile energy prices
- funds for new construction
- money to meet environmental mandates

ENERGY CONCERNS NOT A PRIORITY

- lack of knowledge regarding potential energy savings
- lack of leadership to foster sound energy practices

ENERGY EFFICIENCY FINANCING

- uncertainty regarding future funding sources
- lack of information about financing sources available

ABSENCE OF FACILITY AND ENERGY LEADERSHIP; NEEDED INFORMATION

- federal and state leadership void in facility guidance; limited help in energy efficiency
- structural needs, inappropriate technical advise and limited energy conservation information have caused administrators to spend a disproportionate amount of energy dollars on the least cost-effective measure (building envelope)

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